Distributed by:

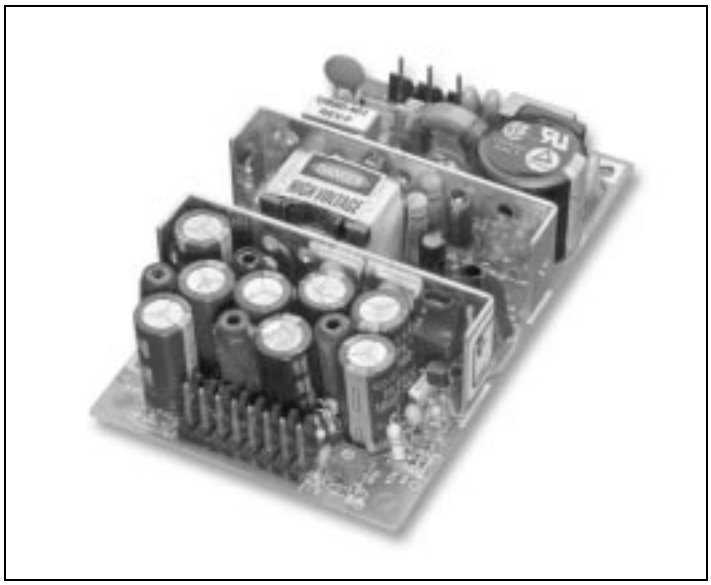
JAMECO® ELECTRONICS

www.Jameco.com ✦ 1-800-831-4242

The content and copyrights of the attached material are the property of its owner.

US50 Series Universal Input 50 Watt Switchers

- 75% typical efficiency
- EN55022-A conducted
- Up to 4 outputs
- Compact 5.0" x 3.0" x 1.2" size
- UL, cUL, TUV and CE
- Available with 12Vdc, 24Vdc and 48Vdc input



Jameco Part Number 204556

The US50 series are economical, high efficiency open frame switchers that deliver up to 50W continuous[9] or 60W peak power from one to four outputs. The 90-250Vac universal input allows them to be used worldwide.

The US50 is one of the *flexibility* series. In addition to the models listed on this sheet, many potential models are available that include full safety agency approval and do not require any non-recurring engineering (NRE) charge. Prototype delivery is just a few weeks.

Flexibility options include an isolated V4 output. Output voltage options are given in the table below. Models with EN55022-B conducted emissions and fully custom models are also available. Contact the factory for details.

US50 models are also available with 12Vdc, 24Vdc or 48Vdc inputs. Please see the DP50 Series data sheet for details.

Specifications are subject to change without prior notice.

Available Models

Model Number	Output	Output Voltage	Output Current Ratings Min[1]	Max[2]	Max[3] (I_m)	Peak[4]
US50-105	V1	+ 5V	0.1A	6A	10A	11A
US50-112	V1	+12V	0.1A	3.3A	4.2A	4.6A
US50-124	V1	+24V	0.1A	1.6A	2A	2.3A
US50-201	V1	+ 5V	0.1A	3A	5A	7A
	V2	+12V	0A	2A	2A	3A
US50-301	V1	+ 5V	0.1A	4A	4A	7A
	V2	+12V	0A	1A	2A	5A
	V3	−12V	0A	1A	1A	2A
US50-303	V1	+ 5V	0.1A	4A	5A	7A
	V2	+15V	0A	1.5A	3A	5A
	V3	−15V	0A	1A	2A	2A
US50-401	V1	+ 5V	0.1A	2A	4A	5A
	V2	+12V	0A	2A	2A	3A
	V3	−12V	0A	0.5A	1A	1A
	V4	− 5V	0A	0.5A	0.5A	1A
Modified standard *flexibility* output options[5]	V1	±2.5 to ±48V[6]		6A	10A	
	V2	±2 to ±48V[7]		2A	3A	
	V3	±2 to ±48V[7]		1A	2A	
	V4	±2 to ±48V[7]		1A	2A	

Notes:

[1] At least 20% of maximum output current (I_m) is required to maintain stated regulation. Supply remains on at zero load, but regulation is not guaranteed.

[2] Convection cooling, 40W maximum[9]

[3] Forced air cooling, 50W maximum[9]

[4] Peak output, 30 sec max

[5] The US50 series allows very fast *flexible* modified standard designs within these parameters without non-recurring engineering charges and while retaining safety agency approvals. Please contact the factory for details.

[6] Can be specified in 0.1V increments

[7] Can be specified in 0.75V increments

[8] Operational extremes per safety agency testing

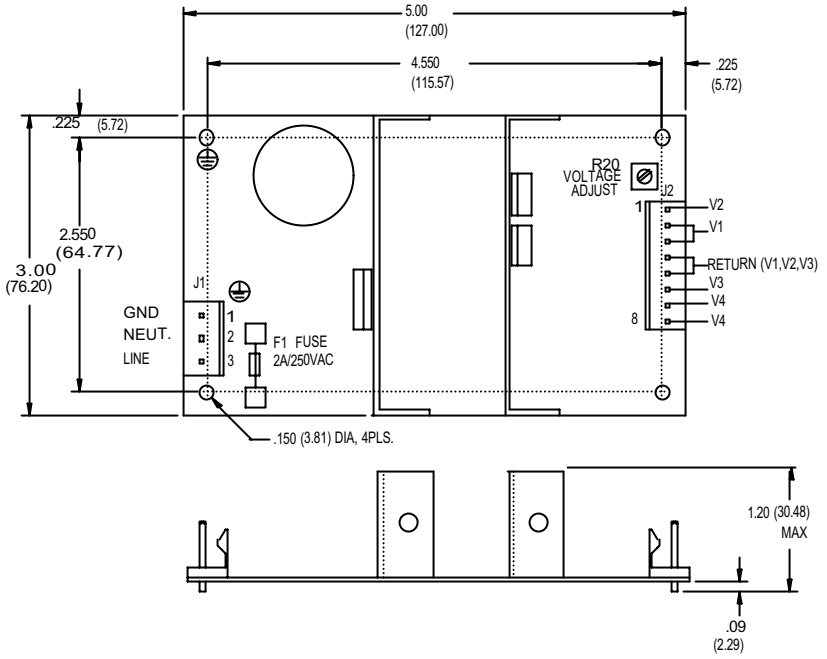
[9] Under certain input, output and/or cooling conditions, maximum continuous output power may be as high as 50W with convection cooling and 60W with forced air cooling. Please contact the factory for details.

Specifications

Specifications are typical at 25°C unless otherwise designated.

Parameter	Limits
Input	
Input Voltage Range	90-250 Vac rated 81-265 Vac operation[8]
Input Frequency	47 to 63Hz
Input Operating Current	1.2A rms @ 90Vac input, 50W output
Input Surge Current	25A max, cold start @ 25°C, 250Vac
Efficiency	75% typ @ 115Vac input, full power
Output	
Output Power	40W, natural convection cooling[9] 50W with 28CFM forced air cooling[9] 60W peak
Line Regulation	±0.2%, V_{in} (min) to V_{in} (max)
Load Regulation	±3% (V1, 20% to 100% I_m) ±5% (V2, V3, V4, 20% to 100% I_m)
Cross Regulation	±0.5% (V1, 20% to 100% I_m on V2-V4) ±5% (V2, V3, V4, 50% to 100% I_m on V1)
Noise and Ripple	25mV max RMS, 50mV max P-P, on V1 with full load 0.5% max RMS, 1% max P-P, on V2, V3, V4, with full load

Parameter	Limits
Output *(cont'd)*	
Power-up Overshoot	5% max, all outputs
Transient Response	V1, for 25% to 75% I_m change, 5% max deviation, with recovery to 1% within 250µS
Hold-up time	8mS min @ 115Vac input, 50W output
Overvoltage Protection Threshold	130% typical of Vout, all outputs
Power Limit Point	130% typical of max rated power
Environmental	
Operating Temperature Range (full power)	0°C to 50°C
Operating Temperature Range (extended range)	0°C to 70°C Derate linearly from full power at +50°C to half power at +70°C
Storage Temperature Range	-25°C to +85°C
Relative Humidity Range	5% to 95%, non-condensing
Vibration	0.75G peak, 5Hz to 500Hz. Test three orthogonal axis at 1 octave/min, 5 min dwell at four major resonances
MTBF	280,000 hours typical calculated per MIL STD 217F at 30°C ambient
Weight	0.55 lb. (0.25 kg)



DIMENSIONS

INCHES (MM)	TOLERANCE
	.XX ±.03 (.76)
	.XXX ±.015 (.38)

J1 CONNECTOR=MOLEX INC., 41671 SERIES, P/N
(MATING CONNECTOR=MOLEX INC., 6442 SERIES (OR 41695 SER
P/N: 26-03-4050 (OR 09-50-8051))

J2 CONNECTOR=MOLEX INC., 41671 SERIES, P/N 26-48-1085
(MATING CONNECTOR=MOLEX INC., 6442 SERIES (OR 41695 SER
P/N: 26-03-4081 (OR 09-50-8081))

(MATING CRIMP TERMINALS=MOLEX INC., 6838 SERIES,
P/N: 08-52-0113 OR 08-52-0112)

Digital Power Corporation

flexibility SERIES